

REMARKS

Claims 1-25 are now pending in the application and have been rejected. Claims 1 and 16 have been amended. The Examiner is respectfully requested to reconsider and withdraw the rejection(s) in view of the amendments and remarks contained herein.

REJECTION UNDER 35 U.S.C. § 102

Claims 1-11, 15-20, 22, 23 and 25 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Ronald (U.S. Pat. No. 5,880,867). This rejection is respectfully traversed.

Ronald discloses an airplane passenger network in which infrared (IR) communication is used alternatively with wired radiofrequency (RF) communication (column 14, line 28-column 16, line 59). Although a server 1153 may communicate via wireless RF with resources outside the airplane, the server 1153 is communicatively coupled with passengers via communication pathways 1175 and 1176, which are either wired or IR links (column 14, lines 42-62; column 17, lines 63-67; column 15, lines 18-67; column 16, lines 1-18; column 18, lines 1-25; FIG. 14).

The only wireless links described between the server 1153 and the passengers are infrared links. Ronald does not describe or suggest any RF wireless connectivity by passenger devices to access points (*e.g.*, 1161 and 1165 in FIG. 11) in an RF-sensitive environment such as an airplane. To the contrary, Ronald describes switching off a wired RF channel in favor of an infrared channel during RF-sensitive flight times (column 15, line 59-column 16, line 44). The access points of Ronald provide infrared links to

passengers via individual IR transceiver pairs 1311 wired to the access points (FIG. 12; column 15, lines 9-18). Ronald does not disclose dividing the IR spectrum into different frequencies, nor would such division be inherent in the passenger network of Ronald. Thus Ronald does not disclose a plurality of infrared (IR) channels having non-overlapping frequencies.

In contrast, the network recited in amended independent claim 1 has a plurality of network access points connected to the server, each access point accessible wirelessly by at least one user portable electronic device over one of a plurality of wireless channels having non-overlapping frequencies. For example, in one embodiment of the claimed invention, the spectrum is divided into three non-overlapping frequency channels of approximately 22 MHz each (specification, page 6, paragraph 18). In such embodiment, each access point is configured to communicate over one of the three channels, and adjacent access points broadcast over different channels (specification, page 7, paragraph 19). Applicants therefore respectfully submit that claim 1 as amended should be allowed.

Claims 2-15 depend from claim 1. Applicants submit that, when considered together with amended claim 1, dependent claims 2-15 also should be allowed. Additionally, referring to dependent claims 3 and 4, the Office Action assumes that the airplane network access points of Ronald have antennas. Applicants submit that although Ronald describes network embodiments having access points that include antennas, access point antennas are not specifically described in the airplane embodiment of Ronald. To the contrary, Ronald apparently teaches against using access point antennas in an airplane environment: Ronald teaches that RF interference

is problematic in airplanes and describes only wired RF communication between the server 1153 and the passengers. As discussed above with reference to claim 1, the only wireless links to and/or from the access points of Ronald are described as infrared, and so access point antennas would be useless.

Referring to dependent claim 7, the Office Action states that each access point in the network of Ronald is configured to communicate with a device that is roaming into a cell area from a cell area associated with another access point. The cells referred to in the Office Action, however, connect access points (*e.g.*, 1221 and 1223 in FIG. 12) to IR pathways 1175 and 1176 column 16, line 60 – column 17, line 32). Each passenger would have to remain seated within a small cone-shaped infrared cell 1237 in order to maintain communication with an access point 1221 or 1223 (column 17, lines 8-15). Roaming therefore would be impossible in the network of Ronald.

Referring to dependent claims 8, 9 and 11, the Office Action states that each access point of Ronald is configured to transmit and receive signals using a spread-spectrum modulation method. In support thereof, the Office Action refers to column 18, lines 6-16 of Ronald. The foregoing reference, however, describes communication by the server 1153 with sources outside the airplane. Applicants submit that access points in the network of Ronald receive IR and/or wired RF signals and do not transmit or receive spread-spectrum modulated signals.

Referring to dependent claim 10, Applicants submit that Ronald does not describe an access point antenna configured to communicate over a channel not being used by an adjacent access point antenna, as claimed in claim 10. As discussed previously with reference to claims 3 and 4, Ronald does not discuss using antennas in

an airplane environment. Additionally, even if such antennas were used in the airplane network of Ronald, they either would all be used, or not used, together, depending on whether a first or second communication channel were in use (column 3, lines 42-63).

Referring to independent claim 16, the Office Action asserts that the claim is a method claim of claim 1 and therefore rejects claim 16. Claim 16 is amended to recite "...distributing use of a plurality of wireless channels in the frequency band ... such that no two adjacent access point antennas use the same frequency...". As discussed previously with reference to claims 1-15, Ronald does not describe using access point antennas in an RF-sensitive environment such as an airplane. To the contrary, Ronald describes switching off a wired RF channel in favor of an infrared channel during RF-sensitive flight times (column 15, line 59-column 16, line 44).

Also as previously discussed, Ronald describes a server that links to access points by wired means and/or by infrared means. Ronald does not disclose dividing the IR spectrum into different frequencies, nor would such division be inherent in the network of Ronald. Thus Ronald does not disclose distributing use of a plurality of wireless channels in the frequency band such that no two adjacent access point antennas use the same frequency, as claimed in claim 16. Applicants therefore respectfully submit that claim 16 as amended should be allowed.

Claims 17-22 depend from independent claim 16. Applicants submit that, when considered together with amended claim 16 and Applicants' previous discussion with respect to claims 2-15, dependent claims 17-22 also should be allowed. Additionally, referring to claim 22, the Office Action asserts that Ronald teaches assigning a channel to more than one access point. In support thereof, the Office Action apparently refers to

elements 1167 and 1187 of FIG. 11 as “access points”. Applicants respectfully submit that the foregoing interpretation of elements 1167 and 1187 would be inconsistent with the recitation of claim 16 (upon which claim 22 is dependent). Specifically, claim 16 recites “...access points having antennas...”, whereas elements 1167 and 1187 of Ronald are IR transceiver pairs for which antennas are neither described nor useful.

Referring to independent claim 23, the Office Action asserts that Ronald teaches a wireless local area network comprising a plurality of network access points (1165, 1161) connected to the server and configured to transmit wirelessly to at least one user device using direct sequence spread spectrum transmission. As previously discussed with reference to claim 1, Ronald does not teach wireless RF transmission between the access points and the passenger devices. Applicants also respectfully submit that the wireless IR transmission taught by Ronald does not include direct sequence spread spectrum transmission. Therefore independent claim 23 should be allowed.

Claims 24-25 depend from claim 23. Applicants submit that, when claims 24-25 are considered with Applicants’ discussion with respect to claim 23, claims 24-25 also should be allowed.

REJECTION UNDER 35 U.S.C. § 103

Claims 12 and 24 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ronald (U.S. Pat. No. 5,880,867) in view of Rautiola (U.S. Pat. No. 5,924,030). This rejection is respectfully traversed. Rautiola describes a communications network in which base station units 12 offer a low-power radio interface 16 to mobile stations 9 (column 6, lines 20-37). The Office Action asserts that it would have been obvious to

provide access point transmission at a low radiated power, as taught by Rautiola, in the system of Ronald in order to transmit a very low power. As previously discussed with reference to amended claim 1, however, Ronald does not teach wireless RF transmission from access points located in the RF-sensitive environment of an airplane passenger cabin (e.g. 1161 and 1165 of FIG. 11). Therefore it would not have been obvious, desirable or even possible to combine the teachings of Ronald and Rautiola as suggested in the Office Action. Applicants therefore submit that claims 12 and 24 should be allowed.

Claims 13 and 14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ronald (U.S. Pat. No. 5,880,867) in view of West (U.S. Pat. No. 6,544,174). This rejection is respectfully traversed. The Office Action asserts that it would have been obvious to design the access points of Ronald to communicate with passenger devices at the frequencies recited in claims 13 and 14. As previously discussed with reference to amended claim 1, the access points of Ronald communicate with airplane passenger devices by IR transmission, but not by wireless RF transmission. Therefore it would have been impossible to engineer the access points of Ronald to transmit at wireless frequencies other than IR frequencies. Applicants therefore submit that claims 13 and 14 should be allowed.

Claim 21 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Ronald (U.S. Pat. No. 5,880,867). This rejection is respectfully traversed. The Office Action asserts that it would have been obvious to design three non-overlapping channels. As discussed above, claim 16, from which claim 21 depends, has been amended to recite "...distributing use of a plurality of wireless channels in the frequency

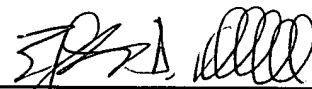
band such that no two adjacent access point antennas use the same frequency...". As discussed previously with reference to claims 1-15, Ronald does not describe using access point antennas in an RF-sensitive environment such as an airplane, nor does Ronald describe a plurality of channels such that no two adjacent access point antennas use the same frequency. Thus it would not have been obvious to provide three non-overlapping channels. Applicants therefore submit that claim 21 should be allowed.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (314) 726-7500.

Respectfully submitted,

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